

## Two Species of *Epilohmannoides* (Acari: Oribatida) of Japan

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**Abstract** The generic name *Iburidania* and species name *I. bipectinata* are unavailable. The valid name of the taxon indicated by *Iburidania* nom. nud. is *Epilohmannoides* JACOT. The taxon known as *I. bipectinata* nom. nud. was described as *E. kishidai* sp. nov. based on the specimens collected in Nagoya. Redescription of *E. esulcatus* OHKUBO was also given.

**Key words:** *Epilohmannoides esulcatus*, *Epilohmannoides kishidai*, new species

*Epilohmannoides* JACOT, 1937 peculiarly lacks the ventral transverse suture which is the most characteristic feature of the other members of the family Epilohmanniidae. Other diagnostic features of this genus were presented properly by NORTON *et al.* (1978). Four members are hitherto known: *E. terrae* JACOT, 1937 (type species) and *E. jacoti* NORTON, METZ et SHARMA, 1978 from USA, *E. esulcatus* OHKUBO, 1979 from Japan (type locality) and Brunei (MAHUNKA 1997), and *E. wallworki* HAMMER, 1981 from Indonesia.

Meanwhile, the second Japanese species of *Epilohmannoides* was collected from Nagoya. I identified it as the mite known by a name “*Iburidania bipectinata* KISHIDA”, which AOKI (1959) included in a list of Japanese oribatid species. At that time, the species was considered to belong to the family Eulohmanniidae. The taxon was first figured by KISHIDA (1954), who did not show scientific name in Latin letters and did not give description or definition in words. Later, KISHIDA (1956) showed a specific feature in words, but still did not give a scientific name to the taxon. It must also be noted that the work of KISHIDA (1956) should not be regarded to have been issued for the purpose of providing a scientific record as required for the publication in Article 8.1.1 of ICZN (4th edition, 1999). Therefore, the authorship of the names, *Iburidania* and *I. bipectinata*, is not attributed to KISHIDA. These names in Latin letters were first published by AOKI (1959), derived from the Japanese phonetic spelling “*Iburidania bipekuchinata*” by KISHIDA (1956) for *Iburidania bipectinata*. AOKI (1959) did not give description or definition of the genus and

species. His nomenclatural act, or the citation of the species name accompanying the reference to KISHIDA's works, could almost satisfy the requirements for the availability of the name with his name as its author. Article 13.1.2, however, prevents the availability by the nomenclatural act of AOKI (1959), because the work of KISHIDA (1956) was not published in the sense of ICZN. As a result, the authorship of the names, *Iburidania* and *I. bipectinata*, is attributed to AOKI (1959), but the names should be regarded as unavailable.

I examined some American specimens of *E. terrae* and *E. jacoti* which Dr. NORTON had kindly sent me. They are labelled “USA: Georgia [,] Clarke Co.: Athens [,] 22–XI–1991 [,] W.T. Atyeo, col [,] Ex: litter of loblolly pine (*Pinus taeda*)” and “USA: North Carolina [,] Beaufort Co.: Washington [,] Fall 1973 [,] L.J. Metz, col [,] Ex: mixed forest litter”, respectively. The examination convinced me that the Japanese species was distinct from the American ones. Therefore, the species so far assigned to *Iburidania bipectinata* nom. nud. is described below as the fifth member of *Epilohmannoides*. A redescription of *E. esulcatus* is also given in this paper.

### *Epilohmannoides kishidai* sp. nov.

(Figs. 1–3)

Iburidani [Japanese name in non-latin letters]: KISHIDA, 1954, p. 6, figs. [maybe unpublished work in the sense of Article 8.1.1]

Iburi-sasaradani = *Iburidania bipekuchinata* [names in non-latin letters]: KISHIDA, 1956, p. 10. [unpublished

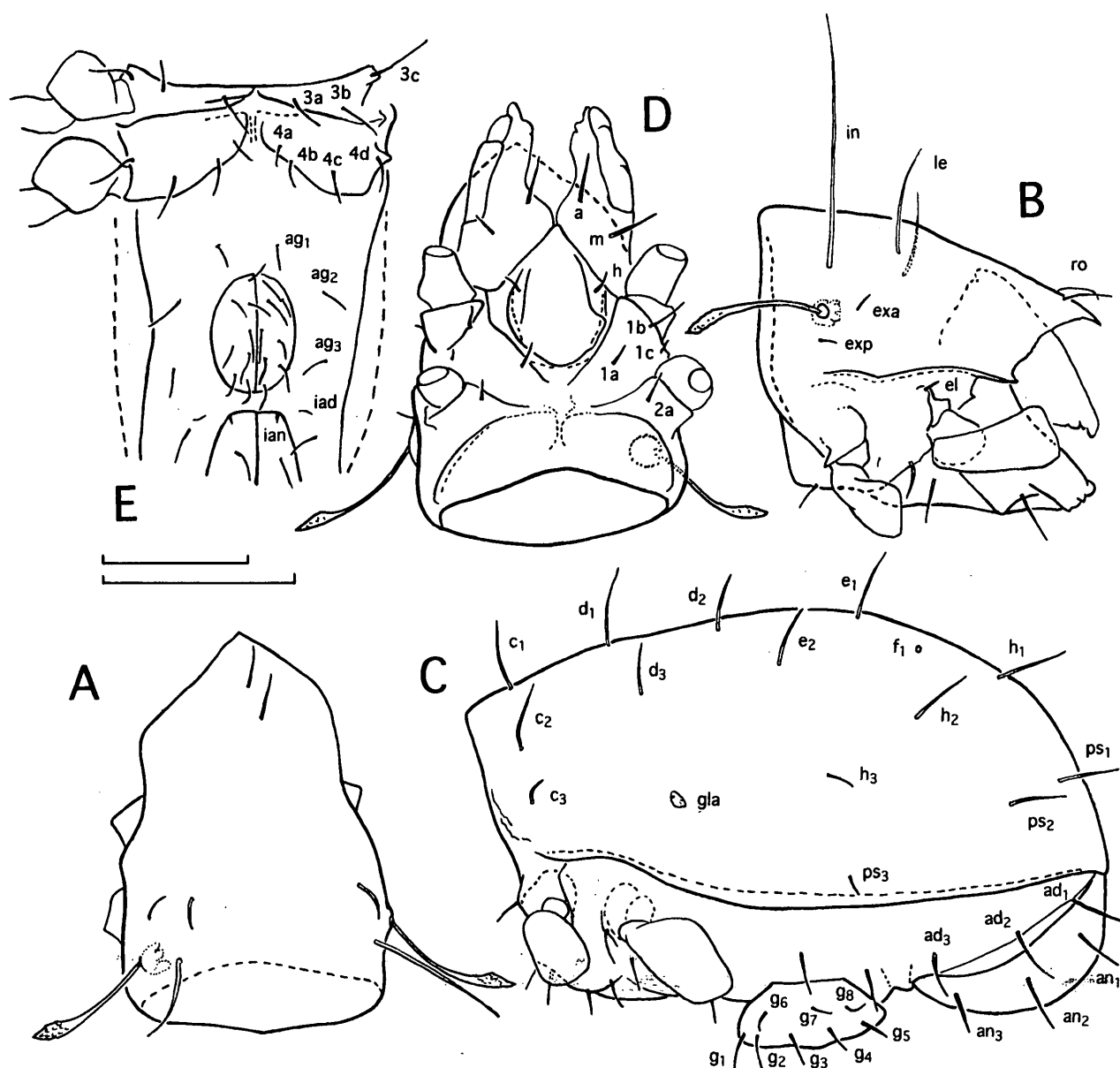


Fig. 1. *Epilohmannoides kishidai* spec. nov. A, dorsal view of prodorsum; B, lateral view of proterosoma; C, lateral view of hysterosoma; D, ventral view of proterosoma (Holotype); E, ventral view around genital aperture of a depressed specimen. (bars = 100  $\mu$ m; lower for A–D, upper for E)

work in the sense of Article 8.1.1]

*Iburidania bipectinata* nom.nud.: AOKI, 1959, p. 133; FUJIKAWA *et al.*, 1993, p. 17.

*Eulohmannia bipectinata* nom.nud.: AOKI, 1965, p. 328.

**Measurements.** Length of prodorsum of 4 specimens 185–235  $\mu$ m (mean 211  $\mu$ m). Length of notogaster of 4 specimens 325–415  $\mu$ m (mean 356  $\mu$ m).

**Integument.** Color light pale reddish yellow. Integument mostly punctate.

**Prodorsum** (Figs. 1A–B, 2). Rostrum medially obtuse but neither protruding nor pointing at tip; laterally with weak irregular serration. Rostral setae *ro* rather thin, weakly barbed, tapering, attenuate at tip. Lamellar setae *le* strongly barbed, scarcely tapering. Interlamellar setae *in* weakly barbed, tapering, attenuate at tip. Anterior exobothridial setae *exa* as long as setae *ro*, minutely barbed, tapering, attenuate at tip. Posterior exobothridial setae *exp* smooth, tapering, attenuate at tip, shorter than *exa*. Supra-coxal setae *el* thicker than *exa*, weakly tapering, rounded at tip. Sensillus clavate; head with

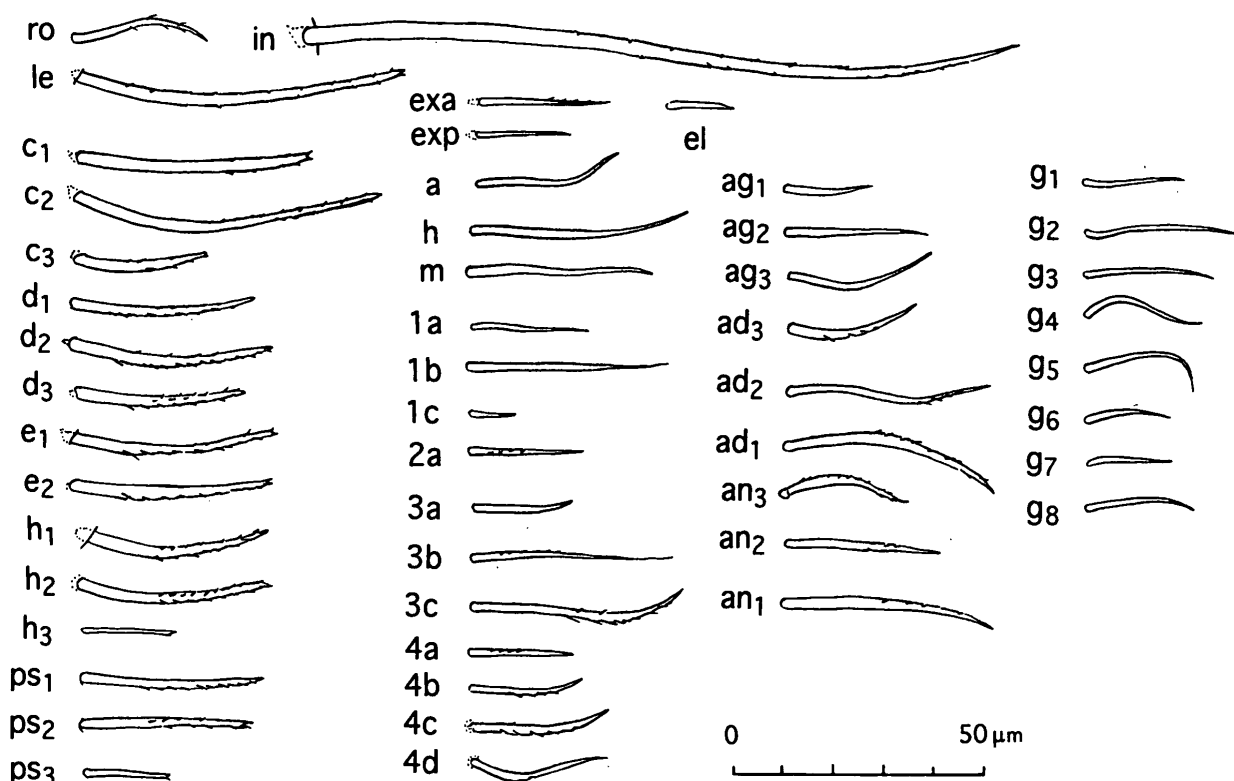


Fig. 2. *Epilohmannoides kishidai* spec. nov. Setae on body.

scale-like barbs.

*Notogaster* (Figs. 1C, 2). All setae except  $h_3$  and  $ps_3$  fairly barbed in distal three-fourth, scarcely tapering;  $c_2$  the longest,  $c_3$  short. Setae  $h_3$  and  $ps_3$  the shortest, minutely barbed, thin but scarcely tapering;  $h_3$  situated near the level of  $ps_3$ . The relative mutual distances of setae  $c_1$ ,  $d_1$ ,  $d_2$ ,  $e_1$ ,  $h_1$  and  $ps_1$ : 100–78–118–182–137–98.

*Ventral region* (Figs. 1C–E, 2). Setal formula of epimeres 3–1–3–4. Epimeral setae tapering, attenuate at tip; setae  $3c$  the thickest and the longest,  $1b$  and  $3b$  long and especially narrowed at tip,  $1c$  minute. Ano-genital setae tapering, attenuate at tip; 8 genital setae smooth, arranged in 2 rows on genital plate; 3 aggenital, 3 anal and 3 adanal setae barbed. The setae becoming longer posteriorly in each series of aggenital, anal and adanal setae.

*Gnathosoma* (Fig. 1D, 2). Infracapitular mentum well separated posteriorly and laterally from podosoma; posterior corners rectangle that can be observed in depressed specimens. Setae  $a$ ,  $m$  and  $h$  tapering, attenuate at tip. Palp 2 segmented (Fig. 3E): 3 setae on basal segment; 1 solenidion and 7 setae on tarsus.

*Legs* (Fig. 3A–D). Chaetotaxy of legs: I (1–5–5–6–

21), II (1–6–5–6–12), III (2–3–3–5–11), IV (2–3–4–4–11); coupled setae  $d$  counted as they should exist on each genu and tibia, though I could not have confirmed all of them. Solenidiotaxy: I (2–1–3), II (1–1–2), III (1–1–0), IV (1–1–0). Famulus  $e$  present. All claws about the same length.

*Type series*. Holotype: Female adult, Higashiyama Park, Nagoya-shi, 8–IV–1976, N. OHKUBO leg, extracted from litter. Two paratypes: same locality as the holotype, 30–XI–1976, N. OHKUBO leg. All deposited in the collection of the National Science Museum, Tokyo.

*Etymology*. The specific name *kishidai* is dedicated to the late Dr. Kyukichi KISHIDA who was a pioneer of oribatid taxonomy in Japan.

*Remarks*. *E. kishidai* sp. nov. closely resembles the North American species *E. jacoti* NORTON *et al.*, 1978. The new species is distinguishable from the latter by 1) wider mutual distance of notogastral setae  $e_1$ ; *E. jacoti* with the relative mutual distances of setae  $c_1$ ,  $d_1$ ,  $d_2$ ,  $e_1$ ,  $h_1$  and  $ps_1$ , 100–90–182–75–139–95, 2) less barbed notogastral seta  $h_3$  and  $ps_3$ ; more barbed in *E. jacoti*, and 3) smaller body size. The new species can easily be distinguished from a Japanese species *E. esulcatus*

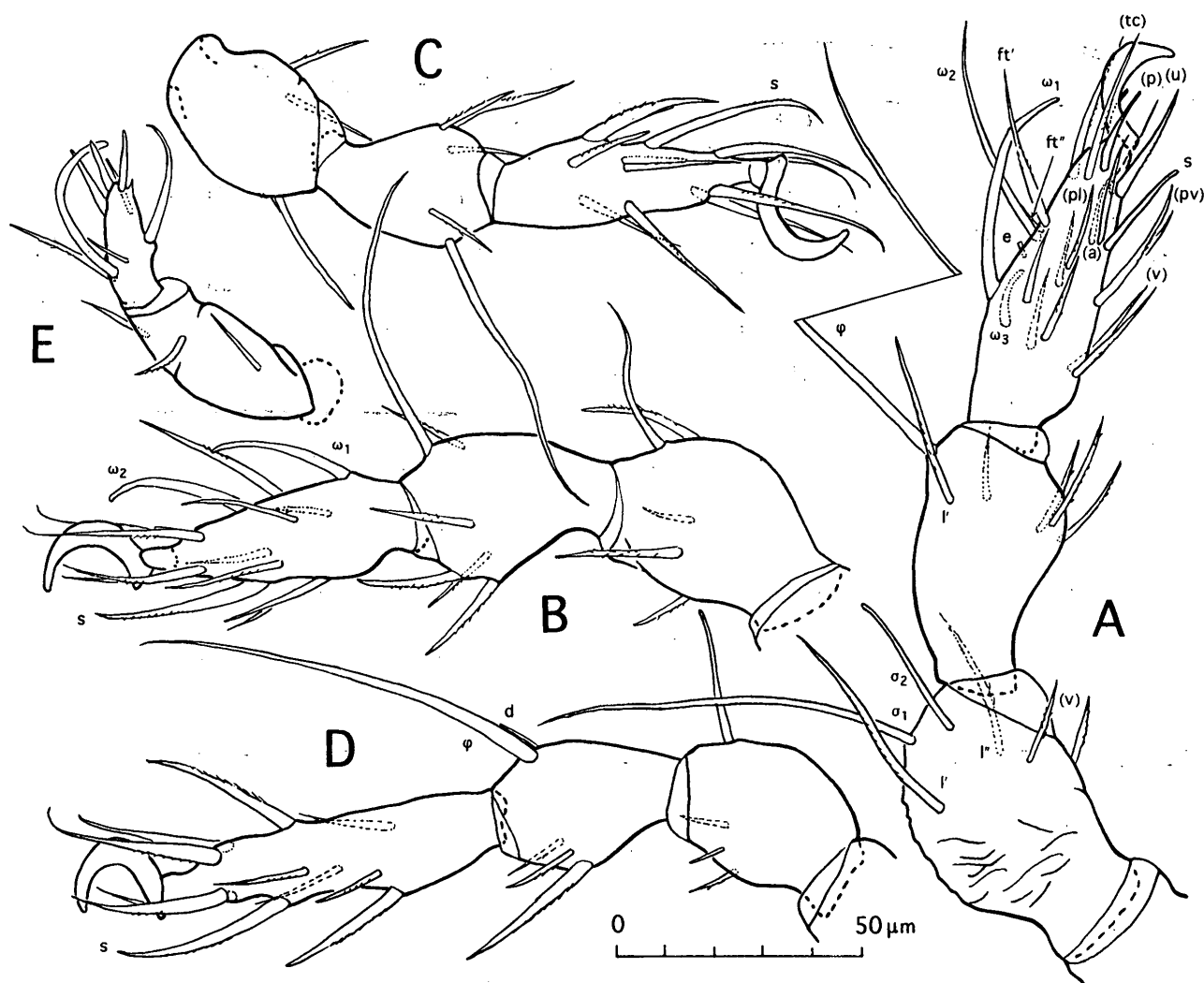


Fig. 3. *Epilohmannoides kishidai* spec. nov. A, leg I (paraxial); B, leg II (antiaxial); C, leg III (antiaxial); D, leg IV (antiaxial); E, palp (antiaxial).

OHKUBO, 1979 by darker color, larger body size, less pointed rostrum, posterior position of notogastral setae  $h_3$ , presence of posterior border of infracapitular mentum, and normal shape of setae on tarsus IV.

#### *Epilohmannoides esulcatus* OHKUBO, 1979

*Epilohmannoides esulcatus* OHKUBO, 1979, p. 261, figs. 1–11.

**Additional description.** Supra-coxal seta  $eI$  present, blunt at tip. Epimeral seta  $Ic$  present, bud like, minute. Notogastral seta  $h_3$  situated between gland  $gla$  and seta  $ps_3$ . Notogastral setae  $c_1$ ,  $d_1$ ,  $d_2$ ,  $e_1$  and  $e_2$  tapering very slightly, blunt or acute distally; setae  $c_2$ ,  $c_3$ ,  $d_3$ ,  $h_1$ ,  $h_2$ ,  $ps_1$  and  $ps_2$  tapering, attenuate distally; setae  $h_3$  and  $ps_3$  very thin. Tarsus I with 12 setae and 3 solenidia;

famulus  $e$  absent.

**Remarks.** The North American species *E. terrae* JACOT, 1937 resembles *E. esulcatus*, but is characterized by 1) protrusion of rostral tip wider, 2) aggenital setae 3 pairs, 3) notogastral setae  $h_3$  and  $ps_3$  thicker and longer, 4) notogastral setae  $h_2$  and  $h_3$  blunt distally, and 5) body size larger. The Javanese species *E. wallworki* HAMMER, 1981 is also similar to *E. esulcatus*, but differs in 1) genital and anal apertures adjacent to each other, 2) protrusion of rostral tip wider, and 3) notogastral setae  $h_3$  and  $ps_3$  longer.

#### Key to species of *Epilohmannoides*

- 1 Posterior border of infracapitulum fused smoothly to epimeral region. .... 2
- Posterior border of infracapitulum ridged, then sepa-

- rated from epimeral region. .... 4
- 2 Genital and anal apertures adjacent to each other. ....  
..... *E. wallworki*
- Genital and anal apertures widely separated from each other. .... 3
- 3 Rostrum medially protruding; 3 pairs of aggenital setae. ....  
..... *E. terrae*
- Rostrum acutely protruding; 2 pairs of aggenital setae. ....  
..... *E. esulcatus*
- 4 Mutual distance of notogastral setae  $e_1$  shorter than that of  $d_1$ . .... *E. jacoti*
- Mutual distance of notogastral setae  $e_1$  wider than that of  $d_1$ . .... *E. kishidai* sp.nov.

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### 摘 要

大久保憲秀 (三重県病害虫防除所 〒515-2316 三重県一志郡嬉野町川北530) : 日本のイブリダニ属の記載.

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故岸田久吉によってイブリダニと呼ばれていた種には学名 *Iburidania bipectinata* が与えられていたが, これは属名, 種名共に不適格名であるので, 名古屋市から採集された標本を元に新種と

して記載し, *Epilohmannoides kishidai* と命名した. 本イブリダニ属 (和名改称) は他に 4 種が知られており, 日本にはヒメイブリダニ *E. esulcatus* も産する.

### References

- AOKI, J., 1959. Record of oribatid mites from Japan. *Jpn. J. Sanitary Zool.*, **10** (3): 127-135. (in Japanese)
- AOKI, J., 1965. Supercohort Oribatei. In: *Mites, An Introduction to Classification, Bionomics and Control of Acarina* (ed. Sasa, M.), pp. 278-340, Univ. Tokyo Press, Tokyo. (in Japanese)
- FUJIKAWA, T., M. FUJITA and J. AOKI, 1993. Checklist of oribatid mites of Japan (Acarina: Oribatida). *J. Acarol. Soc. Jpn.*, **2** (suppl.): 1-121. (in Japanese)
- HAMMER, M. 1981. On some oribatid mites from Java. Part II. *Acarologia*, **22** (2): 217-237.
- KISHIDA, K., 1954. Dani-no-hanasi 2. *Noyaku-tayori*, **1** (8): 6-7. (in Japanese)
- KISHIDA, K., 1956. Dani-no-hanasi 27. *Noyaku-tayori*, **3** (9): 10-11. (in Japanese)
- MAHUNKA, S. 1997. Oribatids from Burunei II (Acarina: Oribatida). (*Acarologica Genavensia* LXXXII). *Revue suisse Zool.*, **104**: 661-700.
- NORTON, R. A., L.J. METZ and G.D. SHARMA, 1978. Observations on *Epilohmannoides* JACOT, 1936 (Acarina: Oribatei), with the description of a new species. *J. Georgia Entomol. Soc.*, **13**: 134-148.
- OHKUBO, N. 1979. A new species of the genus *Epilohmannoides* (Acarina, Oribatida) from Japan. *Annot. Zool. Japon.*, **52** (4): 261-265.